Annals of Medicine and Surgery 73 (2022) 103236

Contents lists available at ScienceDirect

Annals of Medicine and Surgery

journal homepage: www.elsevier.com/locate/amsu

Case Report

Ovarian ectopic pregnancy misdiagnosed as gestational choriocarcinoma: A case report☆

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ARTICLE INFO

Keywords:
Choriocarcinoma
CT scan
Tumor
Metastasis
Pain
Pregnancy

ABSTRACT

Introduction: and importance: Choriocarcinoma is a highly malignant epithelial tumor with often distant metastasis. The clinical presentation of choriocarcinoma depends upon extend of disease and location of metastasis.

Case presentation: A 35-year-old multiparous woman was presented with severe pelvic pain, fatigue and cough. She was diagnosed with positive pregnancy due to elevated B-hCG and hyperechoic mass in right adnexa.

Clinical discussion: Exploration surgery showed a larger mass on the right ovary. She was diagnosed with choriocarcinoma however CT scan showed metastasis of lungs, brain and pelvis. She underwent multiple session of chemotherapy, nonetheless, after 8 months, she passed away.

Conclusion: Timely diagnosis and prompt treatment of choriocarcinoma is necessary to prevent mortality and bad prognosis. It should be differentially diagnosed with all the types of pregnancies.

1. Background

Choriocarcinoma is a rare highly malignant neoplasm of trophoblast. It is likely to develop during pregnancy, i.e. has gestational origin. It is followed by hydatidiform mole can result in abortion, ectopic pregnancy and preterm deliveries. Non-gestational choriocarcinoma is not associated with the pregnancy and is scarcely reported [1]. Its metastasis is commonly reported in lungs, brain, gastrointestinal tract and liver and cutaneous tissues, in rare cases [2].

Accurate differentiation between two types is difficult and there are no distinctive immunohistochemical or microscopic differences between two tumor types [3]. DNA analysis and cytogenetic test are therefore use to distinguish between the two entities but when not possible, history of pregnancy is identified for differential diagnosis [4]. Studies have shown that prognosis of these two types can be different.

76% of choriocarcinoma develop in ectopic location and associated with distant metastasis.It can develop any time between 5 weeks and 5 years after gestation or even after menopause [5]. Approximately, 30% of choriocarcinoma are presented with metastasis at the time of diagnosis [6]. Owing to versatility in clinical presentation, its diagnosis imposes a great deal of challenge. The clinical presentation of choriocarcinoma depends upon extend of disease and location of metastasis. Gestational choriocarcinoma metastasizes heterogeneously and clinical presentation is often due to bleeding from metastatic site [7]. Choriocarcinoma following a term or preterm gestation may be present with amenorrhea, and abnormal uterine bleeding due to invasion of uterine tumor or bleeding from a metastatic site. Bleeding from uterine perforation or metastatic lesions may result in abdominal pain, hemoptysis, or melena [8]. Patients with central nervous system (CNS) metastases often exhibit evidence of increased intracranial pressure from intracerebral hemorrhage, leading to headaches, dizziness, seizures, or hemiplegia [9, 10]. Patients who develop extensive pulmonary metastases may present

; CNS, central nervous system; hCG, human chorionic gonadotropin.

☆ This study was approved by the Research Ethics Board of Shahid University of Medical Sciences(IR.SBMU.RETECH.REC.1400.044). https://ethics.research.ac.ir/ProposalCertificateEn.php?id=190147&Print=true&NoPrintHeader=true&NoPrintFooter=true&NoPrintPageBorder=true&LetterPrint=true.

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https://doi.org/10.1016/j.amsu.2021.103236
Received 26 November 2021; Received in revised form 30 December 2021; Accepted 31 December 2021
Available online 7 January 2022

with dyspnea, cough, or chest pain [11]. Rapid growth, widespread dissemination, and a high propensity for hemorrhage makes this tumor a medical emergency and therefore early diagnosis and prompt initiation of chemotherapy is well known determinant of prognosis of choriocarcinoma [12].

In this article we presented a case of choriocarcinoma in ovary that was misdiagnosed as ectopic pregnancy symptom and reviewed articles in 10 recent years in PubMed database by choriocarcinoma and ectopic pregnancy as keyword. We reviewed articles that misdiagnosed by ectopic pregnancy in first presentation of choriocarcinoma.

2. Case presentation

A 35-year-old woman, Gravid 6, Para 4 and abortion 2, was admitted to the emergency room at Imam Hussein hospital, Shahid Beheshti university of medical science, Iran, with severe pelvic pain, fatigue and cough. The patient had a history of pelvic pain from a month that had worsened at the time of referral and she reported that she was nauseous and had 3 episodes of vomiting in the last 12 hours before her referral. She also reported cough, that initiated a month before her referral. She did not respond to conventional medical treatment for cough. The patient had undergone a cesarean section and a tubectomy 9 months ago and had amenorrhea since then. During admission her blood pressure was 104/65 mm/Hg, heart rate was 120 per min, respiration rate 24 per min, and body temperature was 36.8 Celsius. Physical examination showed that her abdomen was firm by generalized tenderness that was worse in right lower quadrant. Ultrasound showed hyperechoic mass measuring 50 × 58 mm in the right adnexa with moderate free fluid in pelvic. Biochemical analysis showed hemoglobin 5.7 g/dl, hematocrit:18.4, MCV:81.8 and B-hCG positive. According to the symptoms and diagnostic tests, ectopic pregnancy was considered as diagnosis and gynecological consultation was requested. Due to the unstable symptoms, the patient underwent laparotomy with suspicion of ruptured fallopian tube. During surgery, there was no intra-abdominal blood and about 200 cc of serosal fluid in the abdomen drained, the fallopian tube and uterus were normal, and a purple mass measuring 5 × 6 cm on the right ovary that was seen that appeared like a pregnancy product (Fig. 1). After surgery, the patient's B-hCG was 33,827 mIU/ml. Also owing to persistent coughing, patient underwent chest X-ray where scattered patchy opacities in lower lobes was seen (Fig. 2). She was suspected with choriocarcinoma and underwent the necessary work up for other metastatic point. Lung CT showed multiple scattered pulmonary nodules in favor of metastasis along with pleural effusion and some consolidation in lower lobes (Fig. 3). Abdominopelvic CT scan with IV & oral contrast showed a huge enhance tissue mass containing necrotic components, 101*96 mm dimension in left pelvic cavity was detected, and destruction of adjacent left iliac bone extending to left paracolic gutter. Some metastatic lesions were also detected in both the kidneys and spleen (Fig. 3). In brain CT scan also showed a single occipital lobe metastasis. (Fig. 3). All these evidences concluded fourth stage choriocarcinoma with multiple metastases, which was also confirmed by pathology of ovarian lesion and biopsy of abdominal lesions (Fig. 4). According to the above evidence, the patient was a candidate for chemotherapy and within three days after her initial visit she was admitted to the ICU. The patient underwent chemotherapy with 4 cycles of EMA-EP (etoposide methotrexate and actinomycin-D/etoposide and cisplatin) and 5 cycles of EMA-CO (etoposide, methotrexate, actinomycin D, cyclophosphamide, vincristine), finally after two months of treatment the patient responded to treatment and B-hCG was undetectable. After three months, during her follow-up, elevation of the patient's B-hCG was seen again, indicating the relapse. Chemotherapy was re-initiated with 3 cycles of paclitaxel, cisplatin, etoposide, 4 cycles of Liposomal doxorubicin and carboplatin and finally 5 cycles of fuorouracil and dactinomycin and brain radiotherapy. During the chemotherapy, the patient developed fever and neutropenia. After 25 sessions of chemotherapy and 10 sessions of radiotherapy, 8 months from her initial diagnosis, the patient was presented with abdominal pain, bloody ascites and shock at our emergency department where she passed away.

This study was approved by the Research Ethics Board of (XXX).

This case report has been reported in line with the SCARE 2020 criteria [13]. Written informed consent was obtained from the patient for publication of this case report and accompanying images.

3. Discussion and Conclusions

Choriocarcinoma is a malignant neoplasms that is characterized by high levels of human chorionic gonadotropin (hCG) [14], Therefore, this neoplasms requires a significant differential diagnosis from pregnancy [15]. Diagnosis is chiefly characterized by the bleeding of metastatic site [16]. Positive B-hCG with bleeding of unknown origin Due to most manifestation is bleeding, is considered as a differential diagnosis of bleeding and non-pregnant uterus seen from ultrasound can be important indications for the diagnosis of choriocarcinoma [17]. As reported in this case, the patient presented symptoms of abdominal pain and shock and in evaluation, she had hypervascular mass in the adnexa and free fluid in the pelvic cavity along with a positive pregnancy test.

Because one of the causes of death in patients is bleeding in metastatic areas, early diagnosis improves the patient's prognosis, and the diagnosis should rule of different types of pregnancy, even normal intrauterine pregnancies [18]. Cases have been reported in which pregnant patients were presented with intrauterine or vaginal bleeding with or without fetal distress and were diagnosed with placental abruption or uterine rupture, but later in the pathology report, the cause of these manifestation was choriocarcinoma; therefore, choriocarcinoma should be considered under any bleeding conditions during pregnancy, even in normal pregnancy [19].

To further emphasize this diagnosis, a review of the case reports of the last ten years obtained from the PubMed database on choriocarcinomas, that were first diagnosed with ectopic pregnancy.

24 patients with manifestation of ectopic pregnancy at the beginning of admission were studied. The patients' age was between 12 and 46 years with a mean age of 28 years. The most common manifestation was

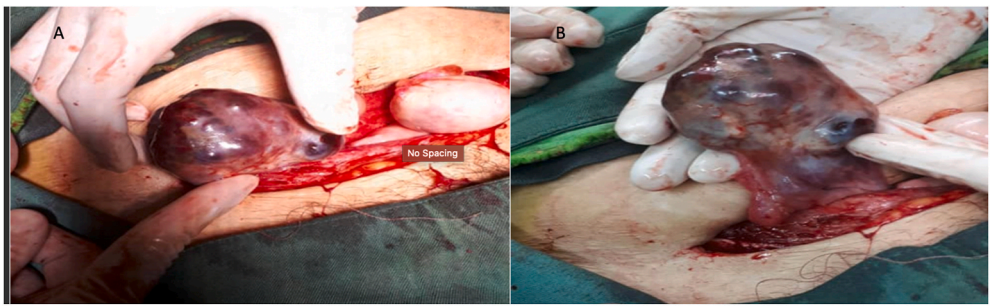

Fig. 1. A.Bilateral ovary and purple mass measuring 5 × 6 cm on the right ovary that looked like a pregnancy product. B. Purple mass measuring 5 × 6 cm on the right ovary that looked like a pregnancy product.

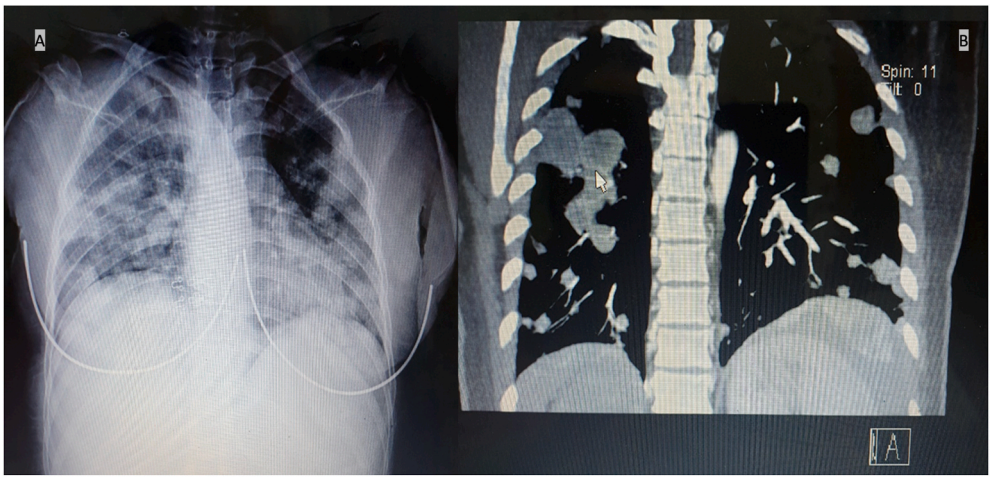

Fig. 2. A.Some scattered patchy opacities in lower lobes. B. Multiple scattered pulmonary nodules in favor of metastasis are detected in associated with pleural effusion and some consolidation in lower lobes.

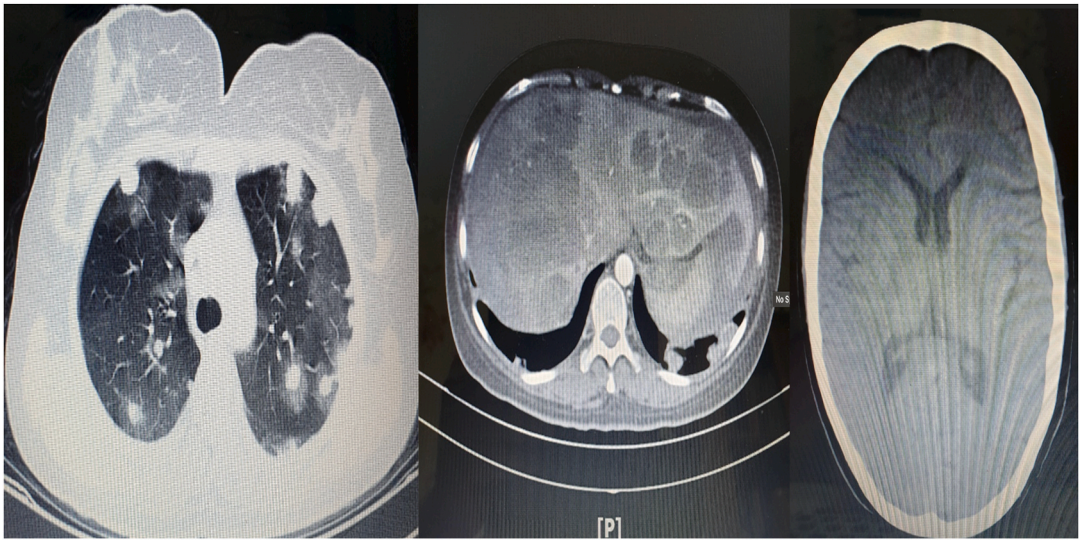

Fig. 3. A.Multiple scattered pulmonary nodules in favor of metastasis are detected in associated with pleural effusion and some consolidation in lower lobes. B. Multiple liver metestasis. C.A single occipital lobe metastasis.

tubal ectopic pregnancy, followed by ovarian ectopic pregnancy and involvement of serous and uterine myometrium.10 patients had primary choriocarcinoma, in which most of the involvement was ovarian and tubular ectopic pregnancy and only one case had myometrial involvement, other 14 patient had secondary or gestational choriocarcinoma. All ovarian involvement was of primary type and most of gestational type was after normal pregnancy. The interval between the previous pregnancy and manifestations of the disease varied between 23 days and 5 years. Most patients were presented initially with abdominal pain and abnormal uterine bleeding. Other manifestations were amenorrhea, shock, stable hCG titer, palpable mass, and fever. The mean hCG was 308634 IU/mL, which ranged from 13 IU/mL to 4,000,000 IU/mL. Ultrasound of 13 patients reported pelvic free fluid, which was bloody, seen during the surgery. 14 patients had metastasis at the time of diagnosis, and the most common site of metastasis was lung. No brain metastasis was reported. Most common surgeries performed were salpingo-oophrectomy and hysterectomy, respectively. A total of 20 patients received chemotherapy before or after surgery, 21 people had complete recovery, the outcome the two patients was unclear and only one patient died, which was due to uncontrolled intra-abdominal hemorrhage from liver [20].

Early diagnosis and immediate treatment are critical to prevent bad prognosis, particularly in regard with metastasis. Misdiagnosis of choriocarcinoma is common and therefore, patients presented with bleeding, pregnancy and systemic symptoms should be considered for choriocarcinoma.

Ethical approval and consent to participate

All procedures performed in this study involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Funding

No funding was secured for this study.

Contributors' statement page

Dr. Seyyedeh Neda Kazemi and Dr.Morteza Tabatabaeefar: conceptualized and designed the study, drafted the initial manuscript, and

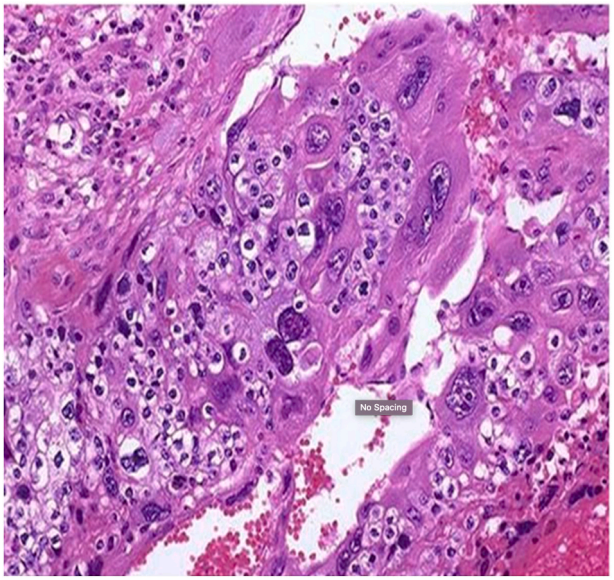

Fig. 4. Cytotrophoblasts and syncytiotrophoblasts with massive hemorrhage and necrosis.

reviewed and revised the manuscript.

Dr. Tahereh Ashraf Ganjooei and Dr. Noushin Afshar Moghaddam: Designed the data collection instruments, collected data, carried out the initial analyses, and reviewed and revised the manuscript.

Dr. Masoomeh Raoufi: Coordinated and supervised data collection, and critically reviewed the manuscript for important intellectual content.

Research registration

N/A.

Guarantor

Masoomeh Raoufi.

Availability of data and material

Data sharing is not applicable to this article as no datasets were generated or analyzed during the current study.

Consent for publication

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Provenance and peer review

Not commissioned, externally peer-reviewed.

Declaration of competing interest

The authors deny any conflict of interest in any terms or by any means during the study.

Acknowledgements

Not applicable.

Abbreviations

CNS	central nervous system
hCG	human chorionic gonadotropin

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.amsu.2021.103236.

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